

What is claimed is:

1        1. A circuit board comprising:  
2              a substrate; and  
3              electrical contacts to mate with a slot connector, the contacts comprising a first set of  
4              contacts associated with the communication of power and second set of contacts associated  
5              with the communication of signals and not used to communicate power, adjacent contacts of  
6              the first set having a first spacing and adjacent contacts of the second set having a second  
7              spacing different from the first spacing.

1        2. The circuit board of claim 1, wherein the first spacing comprises a pitch of  
2              approximately twice a pitch of the second spacing.

1        3. The circuit board of claim 1, wherein the substrate comprises an edge to be  
2              inserted into a slot connector housing, and the first and second set of contacts are formed on  
3              the edge.

1        4. The circuit board of claim 1, wherein the first spacing comprises a pitch of  
2              approximately 0.05 inches and the second spacing comprises a pitch of approximately 0.10  
3              inches.

1        5. The circuit board of claim 1, further comprising:  
2              power regulation circuitry mounted on the substrate and in electrical communication  
3              with the first set of contacts.

1        6. A circuit board comprising:  
2              circuitry; and  
3              a substrate supporting the circuitry and having a contact edge to be inserted into a slot  
4              connector housing, the substrate having a profile engaged by the connector housing to hold  
5              the circuit board in the slot connector housing.

1           7.       The circuit board of claim 6, wherein the profile is engaged by a mechanism  
2       located inside the slot connector housing.

1           8.       The circuit board of claim 7, wherein the mechanism comprises at least one of  
2       a spring located entirely inside the connector housing and a plastic latch internal to the  
3       connector housing.

1           9.       The circuit board of claim 6, wherein the profile comprises a notch formed in  
2       another edge of the substrate.

1           10.      The circuit board of claim 9, wherein said another edge extends in an  
2       orthogonal direction to the edge inserted in the slot connector housing.

1           11.      A method comprising:  
2       supporting circuitry on a substrate to form a circuit board; and  
3       forming a profile in the substrate to engage a slot connector housing to hold the circuit  
4       board in the slot connector housing.

1           12.      The method of claim 11, further comprising:  
2       engaging the profile with a mechanism located inside the slot connector housing.

1           13.      The method of claim 11, wherein the mechanism comprises a spring located  
2       entirely inside the connector housing.

1           14.      The method of claim 11, further comprising:  
2       forming electrical contacts on a first edge of the substrate to circuit board; and  
3       forming the profile on a second edge of the substrate, the second edge extending in a  
4       direction substantially orthogonal to a direction along which the first edge extends.

1        15. A connector comprising:

2              a housing including a slot to receive a circuit board, the housing being formed from a  
3              material having a thermal conductivity of at least approximately 0.27 W/m·K; and  
4              electrical contacts secured to the housing to establish electrical communication with  
5              electrical contact pads of the circuit board.

1        16. The connector of claim 15, wherein the material comprises a liquid crystal

2              polymer.

1        17. The connector of claim 15, wherein the housing comprises fins to promote

2              conduction of heat away from the circuit board when the circuit board is inserted into the slot.

1        18. A method comprising:

2              using a material having a thermal conductivity of at least approximately 0.27 W/m·K  
3              to form a housing for a slot connector, the housing having a slot to receive a circuit board;  
4              and  
5              using the thermal conductivity of the material to conduct heat away from circuitry of  
6              the circuit board.

1        19. The method of claim 18, wherein the material comprises a liquid crystal

2              polymer.

1        20. The method of claim 18, further comprising:

2              forming fins in the housing to conduct heat away from the circuit board when the  
3              circuit board is inserted into the slot.

1        21. A method comprising:

2              providing a slot connector to receive a circuit board; and  
3              forming fins on the slot connector to conduct heat away from circuitry of the circuit  
4              board.

1           22. The method of claim 21, wherein the slot connector couples the circuit board  
2 to another circuit board, the method further comprising:  
3           providing an edge of the slot connector to mount to said another circuit board; and  
4 creating clearances between each fin and the edge.

1           23. The method of claim 22, wherein each of the clearances is in a range between  
2 approximately 1/4 inches and approximately 3/8 inches.

1           24. The method of claim 22, further comprising:  
2 forming the fins out of a liquid crystal polymer.

1           25. A slot connector comprising:  
2           a housing including a slot to receive a circuit board;  
3           electrical contacts to establish electrical communication with electrical contacts of the  
4 circuit board; and  
5           a retention mechanism to engage a profile of the circuit board to secure the circuit  
6 board to the slot connector.

1           26. The slot connector of claim 25, wherein the retention mechanism is located  
2 entirely inside the slot.

1           27. The slot connector of claim 25, wherein the retention mechanism comprises a  
2 spring.

1           28. A method comprising:  
2           using a housing to form a slot to receive a circuit board;  
3           attaching a retention mechanism to the housing to engage a profile of the circuit  
4 board to secure the circuit board to the housing.

1           29. The slot connector of claim 28, further comprising:  
2 disposing the retention mechanism entirely inside the slot.

1           30. The slot connector of claim 28, wherein the retention mechanism comprises at  
2       least one of a spring and a plastic latch.